

US EPA ARCHIVE DOCUMENT



SOUTHERN NEVADA WATER AUTHORITY



# Balancing Water with Energy

How Does the Largest Energy User in the Las Vegas Valley Meet Its Power Requirements?

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EPA Presentation  
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# Agenda

- Introduction to SNWA/Energy Management Department
- SNWA/LVVWD Renewable Portfolio





# What is the SNWA?

- In 1991, seven local water agencies formed the Southern Nevada Water Authority (SNWA) to address water issues on a regional basis, rather than an individual water purveyor basis.
  - Big Bend Water District
  - City of Boulder City
  - Clark County Water Reclamation District
  - City of Henderson
  - City of Las Vegas
  - City of North Las Vegas
  - Las Vegas Valley Water District





# Background

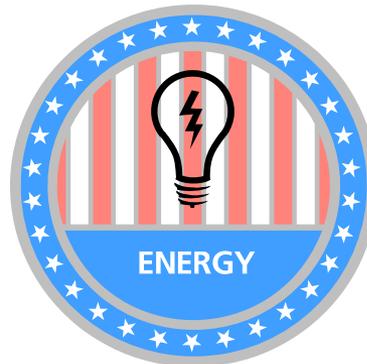
- SNWA is committed to managing the region's water resources and developing solutions that will ensure adequate future water supplies for Southern Nevada.
- SNWA manages and operates the Southern Nevada Water System (SNWS), which began operations in 1971. The federal government officially transferred SNWS to SNWA in 2001. SNWS includes water treatment facilities that pump, treat and deliver Colorado River water from Lake Mead to the Las Vegas Valley.
- SNWA is the largest power consumer in the region.





# Energy Management Department

- Colorado River Commission managed energy supplies for SNWA since inception (1991)
- Energy Management becomes separate department in January 2005





# Energy Management Department Mission

- Manage a portfolio of energy resources for the SNWA and its member agencies that is reliable and yields predictable prices while considering the overall value we place on sustainability and cost minimization.

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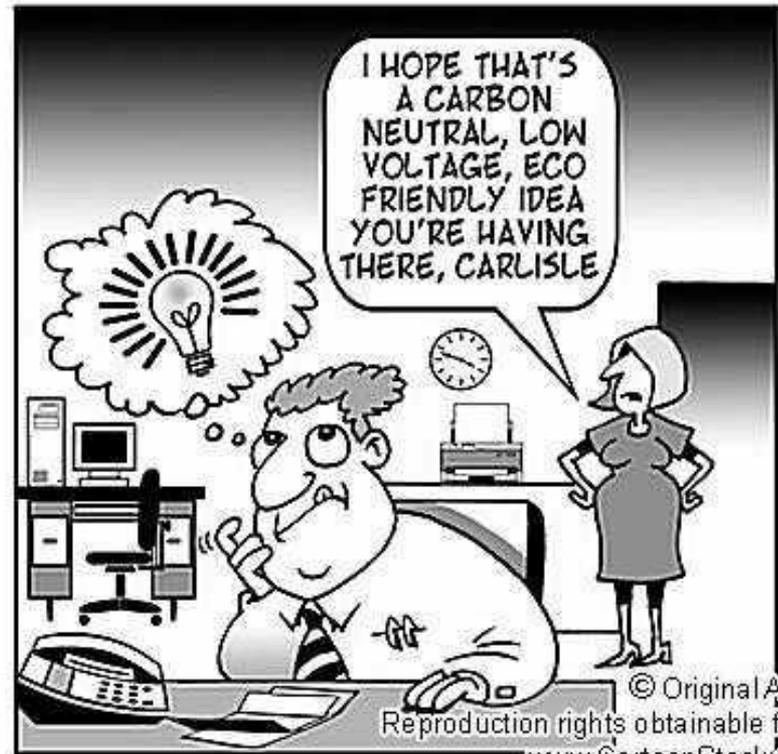
"OUR MISSION STATEMENT SHOULD BE CLEARER  
ONCE WE FIGURE OUT WHAT THE HELL WE DO."





# Energy Management

- Provide reliable power for water pumping at a stable, budgeted cost
- Energy trading and marketing
- Energy risk management, planning and analysis
- Accounting, billing and settlements
- Project planning and management
- Renewable energy program management



# The Renewable Philosophy



- The SNWA's energy portfolio will be comprised of a minimum of 25% renewable energy and energy conservation measures by 2025.
- All new pumping loads associated with the Groundwater Development Project will be served by renewable resources.
- Renewable resources will be diversified (wind, solar, biomass, hydro, etc.).
- Renewable goals will be met through purchases, owned assets, and partnerships.





# SNWA Existing Power Resources



Small Hydroelectric Turbine



- Silverhawk Generating Plant – 125 MW (owned )
- Hydropower from Hoover and Parker-Davis Dam Projects – 20 MW (owned allocation)
- Purchase and sale of short- and long-term energy resources to balance supply and demand
- 2.1 MW of in-conduit hydroelectric generation (owned)



# SNWA Existing Power Resources



SNWA HCPV Plant in Operation



Solar-Covered Carports

- 240 kW of solar generation – River Mountains & Alfred Merritt Smith Water Treatment Facilities (owned)
- 2.6 MW of solar PV – LVVWD reservoirs (owned)
- 222 kW of Concentrating Solar Photovoltaic – River Mountains Water Treatment Facility (owned)





# Future Renewable Energy Projects

- Biomass (waste oil to power)
  - 3 MW Facility in Lincoln County
  - Power Purchase Agreement
  - Completion: December 2010
- Wind Projects
  - Two possible opportunities for partnerships
  - Ownership or PPA depending on partners involved
  - Completion: 2013





# Future Renewable Energy Projects



Biomass Power Plant - Photo credit:  
U.S. Department of Energy,  
Energy Efficiency & Renewable  
Energy Network (EREN)

- Geothermal Exploration
  - 3-year exploration phase began in March 2008
  - Eastern Nevada along Groundwater Development transmission corridor
  - Completion: 2015
- Biomass
  - Various opportunities in the discussion stage
  - Completion 2012



# Future Renewable Energy Assets

- Arrow Canyon Hydroturbine
  - 500 kW on Coyote Springs to Moapa pipeline
  - \$4 million project
  - Completion: Winter 2012





# Future Renewable Energy Assets

- In March 2007, SNWA approved the purchase of livestock along with ranch land. The acquisition of El Tejon and Huntsman ranches in Spring Valley more than doubled the acres of land and acre-feet of water rights previously approved for purchase by the SNWA, and included more than 1,800 cattle and 4,200 sheep.
- Livestock ownership prompted aspirations of conducting a biogas research project.





# Biogas Research



This is the first test subject for a biogas research project at the SNWA ranch. We'll be moving on to human subjects soon. Any volunteers?



# Questions?

